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IMPROVEMENTS TO GAMING MACHINES
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- (57) Claim

1. A gaming machine adapted to play at least one game of chance and to distribute winnings to an operator in proportion to the odds of said game and in proportion to the wager placed by said player; said machine disposed in a vertical cabinet and including an event viewing area where the events of said game can be observed by an operator; control means adapted so that said operator can influence said events and a display means located above said event viewing area and comprising a plurality of multi-sided panels with visual indicia relating to the operation of said games disposed on each said side; said multi-sided panels disposed within said display so that one side of each said multi-sided panels aligns with one side of adjacent multi-sided panels to thereby form a display surface; said panels adapted to rotate so as to display alternate sides of said panels thereby altering the visual indicia displayed by said surface.

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ORIGINAL
COMPLETE SPECIFICATION
STANDARD PATENT

Application Number:

Lodged:

Invention Title:

IMPROVEMENTS TO GAMING MACHINES

The following statement is a full description of this invention, including the best method of performing it known to us :-

IMPROVEMENTS TO GAMING APPARATUS

TECHNICAL FIELD

This invention relates to improvements in gaming machines and more particularly to improvements in gaming machines incorporating a multiple
 5 number of games, or games with a multiple number aspects.

DISCUSSION OF PRIOR-ART

Gaming machines are commonly comprised of at least three elements. The first element is the game screen where the operator of the gaming machine observes the progress and events of the game presently in operation. The
 10 second element of the of the gaming machine is the game controls, where the operator of the game guides the course of events in any particular game as it is played. The third element is the game information sign where a set of instructions containing information that influences operation of the game such as instructions, rules and pay out tables are displayed.

15 Typically, game information signs have incorporated a single display with high quality permanent printing. For gaming machines incorporating a multiple number of games, the use of such single display signs means that each sign holds information relevant to a number of games. Thus the sign may be difficult or confusing to read due to the volume and multiple nature of the information that
 20 it contains.

It is therefore desirable that the instruction set of information displayed by the game information sign at any one time, corresponds primarily with the game presently selected. The use of video screens as game information signs is one solution that has been suggested to this problem. The video screen is updated
 25 as a new game is selected, so that the game information displayed corresponds with this new game.

However the graphics of video screens have low resolution when compared with the high quality print of single display signs. This low resolution makes the game information sign difficult to read when compared to game
 30 information signs incorporating panels with permanent printing. The structure of the machine that is required to incorporate the video screens as a game information sign is also of low aesthetic quality when compared with machines

utilising fixed display signs. Both these factors make the machine less attractive to play when compared to machines utilising single display signs with high quality permanent printing.

Accordingly it is an object of the present invention to provide a game
5 instruction sign that reduces the above disadvantages.

STATEMENT OF INVENTION

According to one aspect, the present invention provides a gaming machine adapted to play at least one game of chance, said machine disposed in a vertical cabinet and including an event viewing area where the events of said
10 game can be observed by an operator; control means adapted so that said operator can influence said events and a display means located above said event viewing area and including a plurality of multi-sided panels with visual indicia relating to the operation of said at least one game disposed on each said side; said multi-sided panels disposed within said display means so that one
15 side of each said multi-sided panels aligns with one side of adjacent multi-sided panels to thereby form a display surface displaying indicia relating to the operation of said at least one game currently being played; said panels adapted to rotate so as to display alternate sides of said panels thereby altering the visual indicia displayed by said surface.

20 By displaying a sub-set of instructions or by arranging the order in which the instructions are displayed high resolution game information signs with minimal information can be deployed.

Preferably the operator can further influence the events of said games by selecting the arrangement of said display elements within said display.

25 Preferably the display is comprised of a plurality of triangular prisms, the faces of which constitute the display elements.

BRIEF DESCRIPTION OF THE DRAWINGS

Figures 1, 3 and 5 show a perspective view of a gaming machine with a game information sign having first, second and third displays respectively.

30 Figure 2 and 4 is a perspective view of a gaming machine which shows the game information sign rotating between first and second displays and second and third displays respectively.

Figure 7 is an end view of one mechanism for rotating the prisms of a game information sign.

35 Figure 8 is an end view of an alternative mechanism for rotating the prisms of a game information sign.

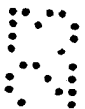
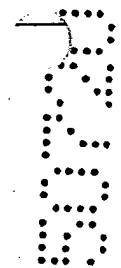


Figure 9 is an end view of a further alternative mechanism for rotating the prisms of a game information sign.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The preferred embodiment of the present invention will now be described with reference to the accompanying drawings.

The preferred embodiment of the present invention is a gaming machine that displays the various events of the game being played on a video display screen. This video gaming machine incorporates a game information sign that has a plurality of displays, each of which incorporates at least one panel with permanent printing.

One benefit of the invention is that the total information that is required to be displayed on the game information sign can be distributed among a number of displays. Another benefit arises from the mechanical nature of the game information sign. This mechanism nature allows high resolution printing to be used on the displays.

Figures 1 through 6 show the operation of a game information sign 3 of a gaming machine that incorporates three games. In the embodiment depicted each display of the game information sign 3 is comprised of a number of vertical panels. Alternatively the display of the game information sign may be comprised of a number of horizontal panels.

The preferred embodiment depicted arranges three of these panels into triangular prisms. Each prism is rotatable within the game information sign 3 so as to allow each of its three panels to be displayed.

The preferred embodiment incorporates three prisms in the game information sign. The prisms are arranged within the sign so that the panels align, preferably with minimal space between their edges so as to be a substantially uniform display surface.

Figure 1 shows the game information sign with a first display 1 for the first game of the machine. In figure 2, after the player of the machine has selected the second game, the machine causes the game information sign to rotate to the second display 2 that corresponds to the second game. Figure 3 is the game information sign showing the second display 2. Similarly, in figure 4, when the

player of the machine selects the third game, the machine causes the game information sign to rotate to the third display 3 of the machine.

In an alternative embodiment, various combinations of the different panels can be utilised to form different displays. A sign with three prisms will have a maximum of twenty seven possible displays. Accordingly a three game machine can have nine different displays for each game. By way of example, the left hand may indicate which of the three games is being played. The other two prisms can be rotated into any number of nine possible combinations. Thus for each game, nine different sets of rules and pay out tables are possible. Each game may control the sequence and conditions under which the nine displays are progressed through.

Alternatively the operator may further influence the events of the game or games by actively selecting the combination and arrangement of elements within the game information sign.

Alternatively, a game machine may only incorporate a single game, however this game may have a multiple number of aspects to it. As the game cycles through the different aspects, the display of the game information sign may change with each different aspect.

Such a game may allow the winnings of a previous game to form the basis of a wager of a further aspect of the game with different odds. In this instance, where the player selects the further aspect, the game information sign will rotate to the prisms so that the operator can view the display that corresponds to the aspect of the game currently being played.

In a further embodiment, the various displays of the game information sign may be printed on a length of flexible material. This will enable the sign to scroll through each of the available displays on this length of material until the required display is shown.

Figure 7 is a top view of a game information sign that incorporates three triangular prisms 3. The prisms are orientated within the sign so that a panel on each of the prisms aligns to form a planar display 14. The edge of each panel should abut the edge on the adjacent panel so that the display appears to be continuous without any breaks between the panels.

So that the prisms can rotate, they need to be aligned so that the arc of rotation of any apex of the prism does not interfere with the arc of rotation of an apex of an adjacent prism.

The prisms are preferably rotated by a rack and flexible shaft. The flexible shaft 4 is threaded. The thread engages toothed wheels 5 on each of the prisms. As the shaft rotates, the thread engages the teeth on the wheel 5 causing it to rotate. Rotation of this wheel causes rotation of the prism. As the shaft in this embodiment engages each of the wheels 5, each triangular prism will rotate in unison with the other prisms.

10 Figure 8 is an alternative means by which the rotation of the prisms can be controlled. A toothed belt 8 engages toothed wheels 5 on the prisms. As the belt rotates, it engages the teeth on the wheels 5 thereby causing the prisms to rotate. Gear 9 is a tension wheel that adjusts the tension on the belt to prevent slipping of the belt against the teeth on wheel 5.

15 Where the prisms are required to be rotated independently, one motor and gear train may be used per prism. The gear train could be a threaded shaft and toothed wheel or a belt and pulley system.

Alternatively the shaft of the motor could engage the axis of the prism directly and rotation of the motor could be controlled by the micro-processor of
20 the game machine.

Rotation of the prisms is controlled by motor 7. Motor 7 is preferably controlled by the central processor of the gaming machine. To control the game information sign the triangular prisms will indicate to the processor, via a feedback loop, their position within the game information sign. In the preferred
25 embodiment, only one feedback loop is required, because the prisms rotate in unison. The feedback loop signal will indicate the position of the prisms. The processor will cause the prisms to rotate by activating the motor until required signal is detected, at which point the processor will cause the motor to cease rotating.

30 Alternatively, a series of proximity sensors or stop mechanism may be located around the base or top of one of the prisms. A corresponding member that is detected by the sensors or that engages the stop mechanisms will be

located at one point on the prism. As the prisms rotate, the sensors will be triggered in sequence or the stops will be engaged in sequence. This sequential triggering serves to indicate to the processor the location of the prisms within the game information sign.

- 5 Where the prisms are required to be rotated independently, a separate feedback loop will be required for each prism, to enable the processor to exercise individual control of each prism.

Referring to Figure 9, a further alternative mechanism for rotating the prisms of the game information sign is illustrated. In this arrangement a gear
10 drive mechanism 12 is employed. A primary gear 13 is mounted on the drive shaft 14 of an electric motor. The primary gear 13 engages and drives idler gear 15a which in turn drives gears 16a, 16b which are mounted on respective display prisms. Prism gear 16b engages and drives idler gear 15b which in turn engages and drives prism gear 16c mounted on an adjacent display prism. The
15 respective directions of rotation of each gear are indicated. Optical position sensors 17 can be used to control the position of primary gear 13 and thereby control the position of the display prisms. This gear drive arrangement has been found to provide highly accurate and consistent positioning of the display prisms.

The prisms will preferably be formed from transparent or translucent
20 material. Located within each prism will preferably be some form of illumination. Florescent tubes can be used for this purpose. The tube is preferably mounted to the machine cabinet so that it does not rotate. The prism will be arranged with an aperture in its lower surface so that it can be mounted over the florescent tube. Thus the prism can rotate around the tube whilst the tube remains
25 stationery. This eliminates any need for rotating electrical connections to the florescent tube

The panels of the prisms should have permanent printing affixed. One means of achieving this is to print onto a face plate that is then glued onto the prism. Alternatively, the face plate may be removably attached to the prism by
30 clips, double sided tape or the like. It is preferable that each edge of each face plate is bevelled, so that each apex of the prism is sufficiently sharp that the impression of a continuous planar display is created.



THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A gaming machine adapted to play at least one game of chance, said machine disposed in a vertical cabinet and including an event viewing area where the events of said game can be observed by an operator; control means adapted so that said operator can influence said events and a display means located above said event viewing area and including a plurality of multi-sided panels with visual indicia relating to the operation of said at least one game disposed on each said side; said multi-sided panels disposed within said display means so that one side of each said multi-sided panels aligns with one side of adjacent multi-sided panels to thereby form a display surface displaying indicia relating to the operation of said at least one game currently being played; said panels adapted to rotate so as to display alternate sides of said panels thereby altering the visual indicia displayed by said surface.

2. A gaming machine according to claim 1 wherein said gaming machine includes a plurality of games selectable by said operator, and wherein said display surface is selected to be viewed by said operator, said selection being dependent on at least one aspect of the game currently being played or selected to be played from said plurality of games.

3. A gaming machine according to any one of claims 1 or 2 wherein each display surface incorporates information for a single game.

4. A gaming machine according to any one of claims 1 to 3 wherein said operator can further influence the events of said games by selecting the combination of said panels.

5. A gaming machine according to any one of claims 1 to 4 wherein said multi-sided panels are triangular prisms.



6. A gaming machine substantially as herein described with reference to the accompanying drawings.

DATED this 15th day of April, 1999.

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ABSTRACT

The invention provides a gaming machine disposed in a vertical cabinet and including an event viewing area where the events of the game can be observed by an operator; control means adapted so that the operator can influence the events and a display means located above the event viewing area and comprising a plurality of multi-sided panels with visual indicia relating to the operation of the games disposed on each side; the multi-sided panels are disposed within the display so that one side of each of the multi-sided panels aligns with one side of an adjacent multi-sided panel to thereby form a display surface; the panels are adapted to rotate so as to display alternate sides of the panels thereby altering the visual indicia displayed by the display surface.



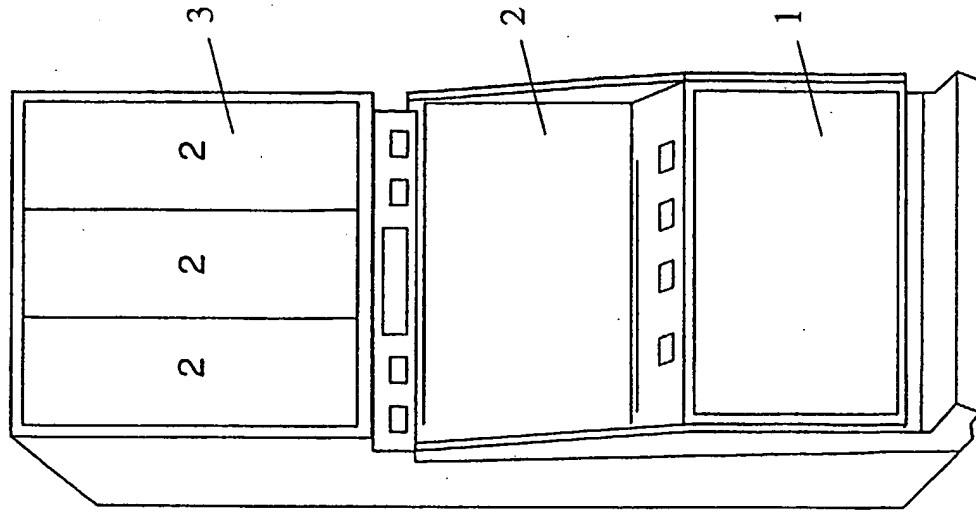


Fig 3.

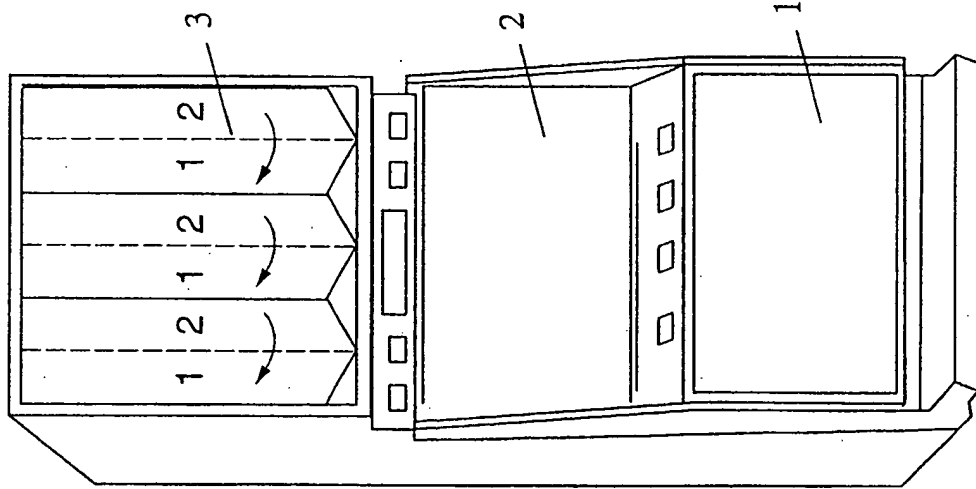


Fig 2.

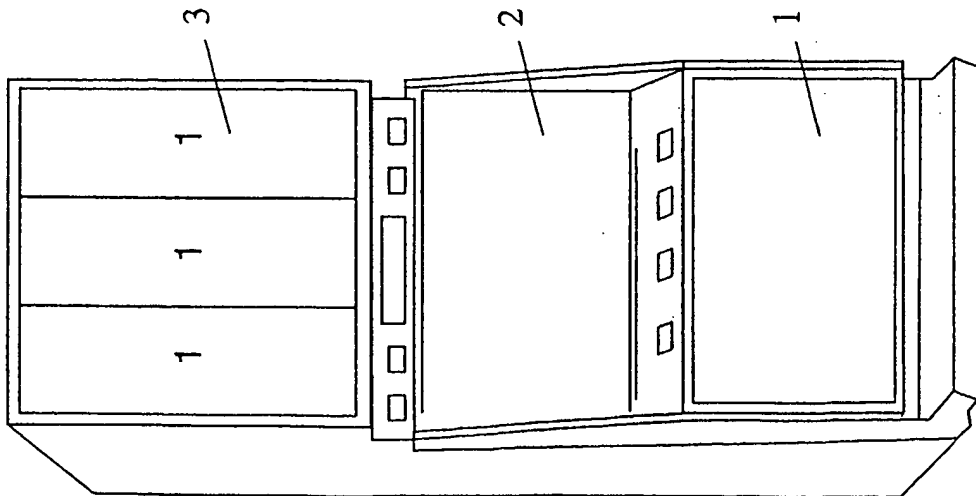


Fig 1.

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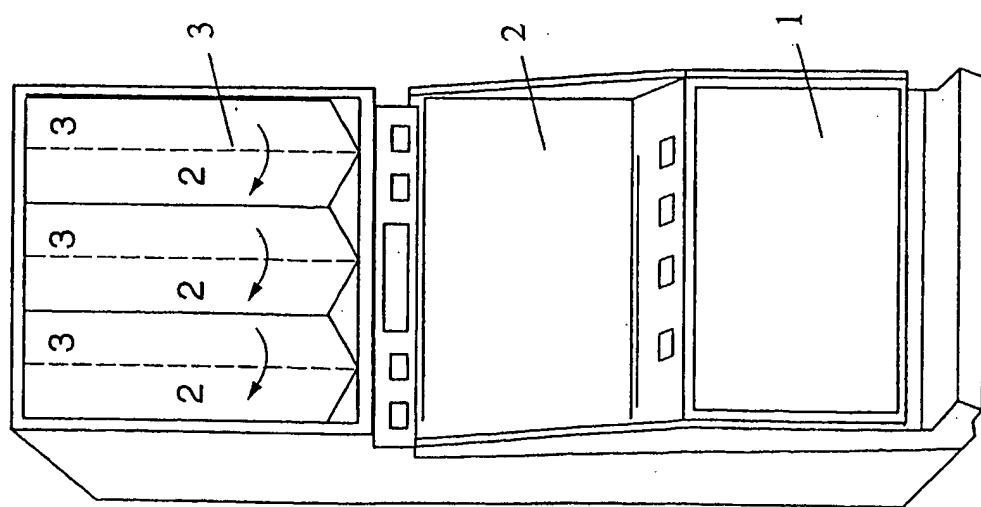


Fig 4.

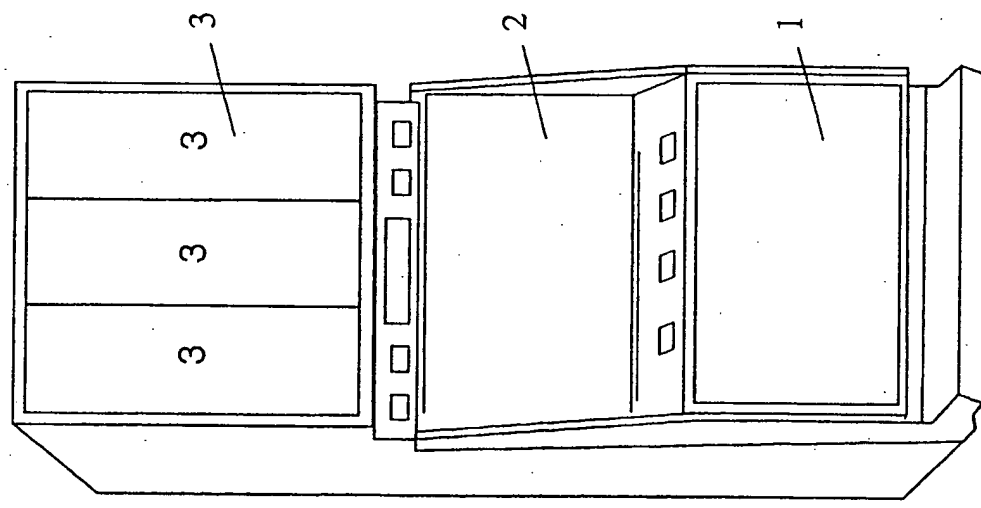


Fig 5.

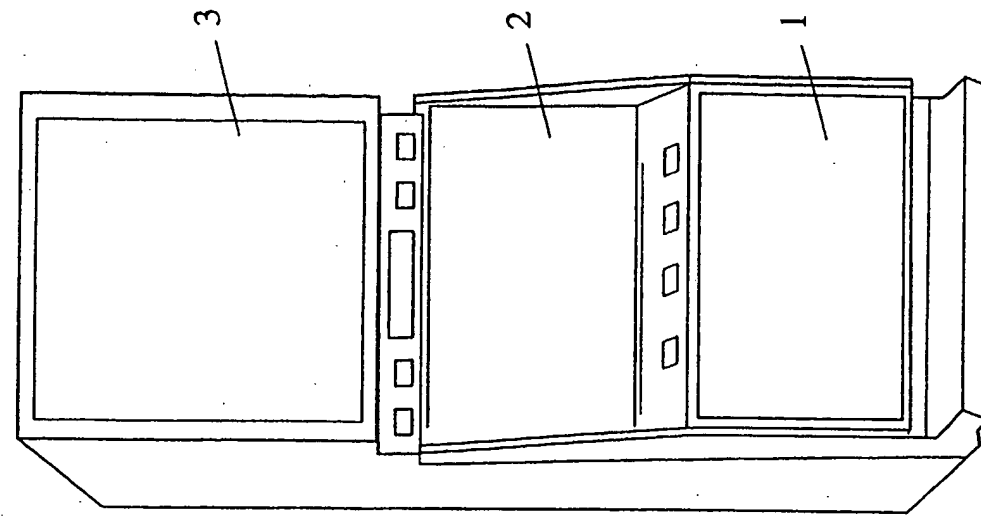
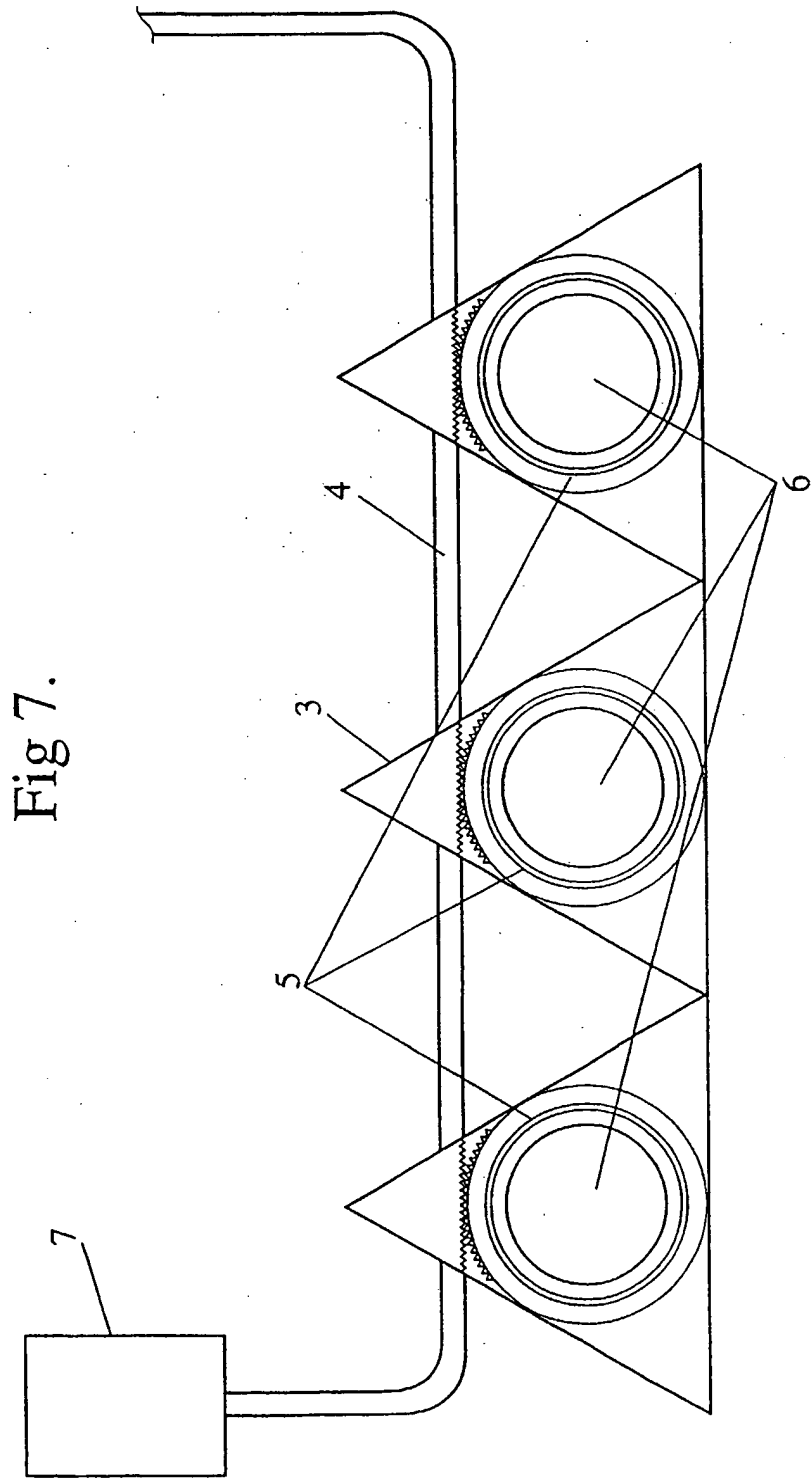


Fig 6.



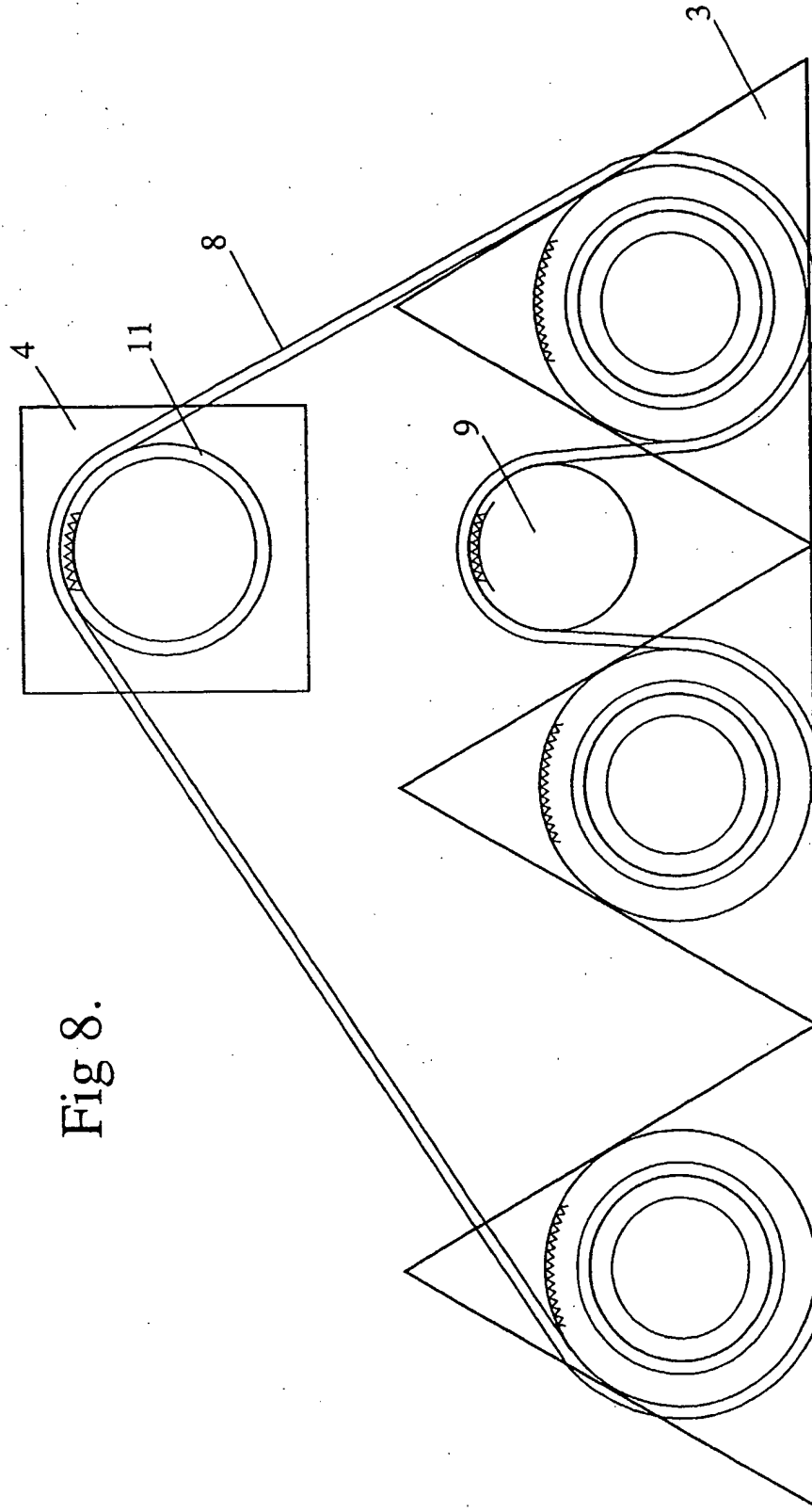


Fig 8.

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Fig 9.

